OUTBREAK SPOTLIGHT….

"Outbreak Spotlight" is a regularly appearing feature in the *Indiana Epidemiology Newsletter* to illustrate the importance of various aspects of outbreak investigation. The event described below highlights a rapid, integrated response conducted by a local health department to prevent a community-wide outbreak.

An Exercise in Preparedness

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It seems that in the world of local health departments (LHD), disease outbreaks generally occur just before a holiday weekend or when the health officer is out of the office. Recently, the health officer was on vacation when the LHD was notified of a potential outbreak two days before the Easter weekend.

The executive director of a retirement facility contacted the St. Joseph County Health Department (SJCHD) reporting that an outbreak of gastrointestinal illness among residents and staff was worsening by the hour. By noon that day, at least 30 residents and staff were ill, several of whom required transportation to the local hospital for treatment of dehydration.

Upon receiving the call, the SJCHD immediately sent a team of environmental health specialists and public health nurses to the facility to determine if an outbreak existed and to gather as much information as possible. The field team inspected the kitchen facility and interviewed the executive director and some of the staff. The information the team gathered in a short amount of time proved to be vital to the SJCHD's further response. While the team was en route to the facility, the SJCHD immediately notified the Indiana State Department of Health (ISDH) field epidemiologist for Public Health Preparedness District 2 to report a possible foodborne illness outbreak.

Once the field team members returned from the facility, they met with the SJCHD epidemiologist, the supervisor of the public health nurses, the manager of the food services division and the ISDH District 2 field epidemiologist. Based on the field team's findings, it was determined that the facility was experiencing a serious outbreak. Staff members at the SJCHD had already begun developing a questionnaire, including a broad case definition and a 72-hour food history. This was expedited by having the facility's executive director fax the menus from the previous week to SJCHD.

More cases were identified and the outbreak threatened to spread into the community. The SJCHD heightened its response. The SJCHD notified the backup health officer, the administrator of the day, the public information officer, a health board member, local hospital emergency department, the mayor's office, and the county commissioners office. The SJCHD sent a larger field team to the facility to conduct interviews with residents and staff. The SJCHD

field staff members who were performing other duties were asked to report to the facility, if possible, to aid in the investigation.

The facility's administration established a core group on-site to lead the investigation there. As the SJCHD field staff members reported for duty, this core group would assign them to a particular wing of the facility to conduct interviews. The field staff interviewed the residents in their apartments since the facility had issued self-imposed quarantine and isolation of all residents. It was determined that there should be at least two field persons per interview, and that facility staff would be available to accompany the interviewers at a resident's request. Facility staff members were a valuable resource since the residents were very worried about becoming ill and wanted information about what was happening.

In addition to restricting residents to their apartments, other control measures were implemented before the second SJCHD team arrived. The executive director closed all of the common rooms including the dining room. Staff began extensive cleaning of all contact surfaces in those rooms using a bleach water solution. All leftovers from the previous 72 hours were held for possible sampling. Residents were served soup and sandwiches in their apartments. Signs were posted at the main entrance of the facility to inform visitors of the outbreak in an attempt to prevent it from spreading further in the community. Finally, the residents were kept informed of the situation via an "in-house" channel that was updated with new information as it developed, as well as asking residents to inform the staff if they became ill. Ill staff members were excluded from work until symptoms resolved.

The SJCHD conducted more than 80 resident and staff interviews in less than two hours. All persons at the facility were interviewed, since it was unclear who was symptomatic. The field team identified several additional cases, including one who required transportation to the hospital due to dehydration. The rapid gathering of information enabled the SJCHD to quickly determine that this outbreak was most likely due to person-to-person transmission instead of foodborne. A line listing of all the foods eaten by the symptomatic and non-symptomatic persons was developed. This indicated that there were no food items consumed specifically by symptomatic persons. This was later supported by statistical analysis of food-item consumption. Although one food service worker was ill with compatible symptoms prior to the outbreak, she was excluded from work while ill and did not return until symptoms ceased. Several days then elapsed before the start of the actual outbreak, during which approximately three other residents became ill. If the outbreak had been foodborne, a large surge of cases occurring at one time over several areas of the facility would have been expected shortly after any food contamination. No other symptomatic food workers were identified.

The field team provided the facility's executive director with ISDH enteric specimen collection containers to distribute among the ill residents and staff who would be capable of submitting a stool specimen. Since the ability of residents to provide information varied, it was critical to maintain constant communication with facility staff to aid the information gathering process.

Stool specimens were collected over the holiday weekend, and the facility's executive director stored them in a locked refrigerator to maintain chain of custody. By Monday evening, 16 samples were available, and by late Tuesday morning, a courier service had delivered them to the ISDH Laboratories. Within 24 hours, the SJCHD was notified that 14 of the 16 samples tested positive for Norovirus.

Within one week, an outbreak was identified, questionnaires were completed, inspections conducted, samples collected and control measures implemented. This serves as an excellent example of what can be accomplished when a LHD is prepared for a public health emergency, then coordinates and communicates to all staff members, as well as with the ISDH, to respond to that emergency.